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## **Point prevalence survey of antimicrobial utilisation patterns among public hospitals in South Africa using a newly developed App; findings and implications**

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**Background and objectives:** Antimicrobial use is growing world-wide driven by increasing demand especially in developing countries. Concerns with rising antimicrobial resistance rates (AMR) have resulted in national action plans (NAPs) to improve future prescribing. A key element of NAPs is understanding current prescribing patterns. In hospitals, this typically involves point prevalence surveys (PPS). In sub-Saharan African countries, PPS study forms were updated to include Human Immunodeficiency Virus (HIV), tuberculosis, malaria and malnutrition as these were absent from Global and ECDC studies. Concerns with the length of time for data collection, need for rapid feedback and costs to undertake PPS studies amongst African countries, led to the development of a specific web-based App. The pilot study with the App in a tertiary hospital in South Africa signalled good acceptance and appreciably reduced data collection and feedback times. Additional PPS studies using the refined App have now been undertaken among a range of public hospitals in South Africa including paediatric populations, and we wish to consolidate the findings. **Method:** A purpose-built web-based application was used to collect PPS data among 18 public sector hospitals including paediatric populations involving over 5600 patients. Quality indicators included adherence to current guidelines and prescribing broken down by WHO AWaRe classification. **Results:** A third (33.6%) of adult patients were treated with an antimicrobial, similar to the initial study (37.7%) involving the group. The rate was higher among the paediatric population with nearly half (49.7%) receiving at least one antimicrobial. In the adult study, in the medical and surgical wards, antimicrobials from the Access group were mostly used (54.1%), while in ICUs, antimicrobials from the Watch list were mostly used (51.5%). Compliance with the South African Standard Treatment Guidelines and Essential Medicines List was 90.2%. Among paediatric patients, penicillins with/ without an enzyme inhibitor and gentamicin were the most prescribed antibiotics, with 55.9% from the Access group, 27.8% from the Watch group, and only 3.1% from the Reserve group. There were concerns with prolonged antibiotic administration for surgical prophylaxis and high use of IV administration that needs addressing. **Conclusion:** The web-based PPS App was successful in capturing PPS data, able to reduce data collection time, produce rapid feedback and easy to use. Furthermore, the PPS provided targets to improve future antimicrobial prescribing among public sector hospitals in South Africa including IV administration and surgical prophylaxis. The web-based tool is now being used in Eswatini, with potentially wider applications.